**Chatfield Material List**

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| **Material** | **Details** | **Source** | **Notes** |
| Bold’s Basal Media – approx. 250 ml | Growth media for the Chlorella algae – solution provided by Nick Sweeney from NREL | solution mixed by NREL scientist | The recipe and composition is readily available.[**http://www-cyanosite.bio.purdue.edu/media/table/bb.html**](http://www-cyanosite.bio.purdue.edu/media/table/bb.html)Volume: 250 ml |
| Chlorella Vulgaris | Unmodified species | NREL  | provided by NREL- 6 grams biomass |
| Tris-Acetate-Phosphate - sulfur | Media for Chlamydoomonas | solution mixed by NREL scientist | Volume: 250 ml |
| Chlamydomonas reinhardtii | Unmodified species | NREL | provided by NREL – 6 grams biomass |
| ABS plastic  | Bioreactor and other parts will be printed in ABS  |  | Stratasys P400 ABS |
| 6V micro motor | 110 RPM motor | Spark Fun part number ROB-12143 | Enclosure also included ROB-12105 |
| Camera | C329-UART-board | electronics 123 | Using lens L361RKC329 or L28IRKC329 |
| Hydrogen Sensor | 5V | SparkFun SEN-10916 |  |
| Solenoid Valve | 5V | SparkFun ROB-11015 |  |
| Photo sensor | 4 sensors | SparkFun SEN-09088  |  |
| Button Cell Battery | CR 1225 A | Renata | 3 x 20 x 20 (mm) 220 mAh 4 needed |
| Button Cell Battery | CR |  |  |
| LED lights | 25 light strip | Sparkfun PRT-12621 |  |
| LED | Various | Superbrightleds.com | WE have ordered several different lights and are currently working to see which will work the best |
| Real time clock | clock | Sparkfun COM-00540 |  |
| PCB Circuit Board | Board to hold photocells | Radio Shack Prt: 276-004 |  |
| Cadmium-sulfide photocells | 4 photocells for Chlorella | Radio Shack prt:276-1657 |  |
| Adhesive | fast drying | 3M 4475 | scotch-weld VOC 600 g/L |
| Adhesive | super glue | Loctite Super Glue gel |  |
| Polycarbonate | Polycarbonate to enclose the bioreactor | eplastics sample packpart #  | [www.eplastics.com](http://www.eplastics.com) |
| Acrylic Tubing | various sizes | United States Plastic Corporations | http://www.usplastic.com/catalog/item.aspx?itemid=23401&catid=440 |
| Bearings | Tapered Outer Diameter, Flanged | F2ZZ and F3ZZ | www.astbearings.com |
| Bearings | Miniature & Instrument Series (metric) | 601XHZZ and 602XHZZ | [www.astbearings.com](http://www.astbearings.com) |
| Rubber O-rings | #207 O-Ring  | PartsmasterPro 53262 | 1/2“ OD 3/8” ID x 10 |
| Rubber O-rings | #241 O-Ring  | PartsmasterPro 58286 | 9/16“ OD 7/16” ID x 10 |
| Rubber O-rings | #210 O-Ring  | PartsmasterPro 58271 | 11/16“ OD 1/2” ID x 10 |
| Gas permeable membrane  | 0.005 inch cured silicone sheeting.  | SSP inc. number:SSPM823-.005Batch EH016 |  |
| Hydrogen sensing tape |  | HySense |  |
| Silicon Caulk | GE Silicon II  | Home Depot |  |
| Grease | Super Lube Silicone Lubricating Compound | Home Depot Model #21030 |  |
| Fasteners | various |  |  |
|  |  |  |  |
| Helicoils | various |  |  |
| Helicoil epoxy | Bob Smith slow cure – 30 min epoxy | Colpar Hobbies |  |
| Silicon sheeting for gasket | 70A Durometer, Smooth Finish Silicone Sheeting 1/16” thick | Amazon.com |  |
| Silicone Glue | TZ1143 | MarineDepot .com |  |
| Color Sensor | Sensor to monitor Chlorella lipid content | SparkFun SEN-11195 | 2 sensors needed |
| Copper tape |  | Sparkfun: PRT. 10561 |  |
| Female header | Swiss machine pin | Sparkfun: PRT. 00743 |  |
| Break Away Header - straight | 2 mm | Sparkfun: PRT. 00116 |  |
| 2 mm jumper wire | various | Sparkfun: PRT. 09044 |  |
| 2 pin jumper |  | Sparkfun: PRT.09044 |  |
| Molex – jumper cables | various |  |  |
| JST Jumperwire | various |  |  |
| Duct Tape | 1 meter | 3M | We are open to whatever would be best from an outgassing perspective |
| Gore Tex |  | Gore Tex | Unknown quantity at this time |
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